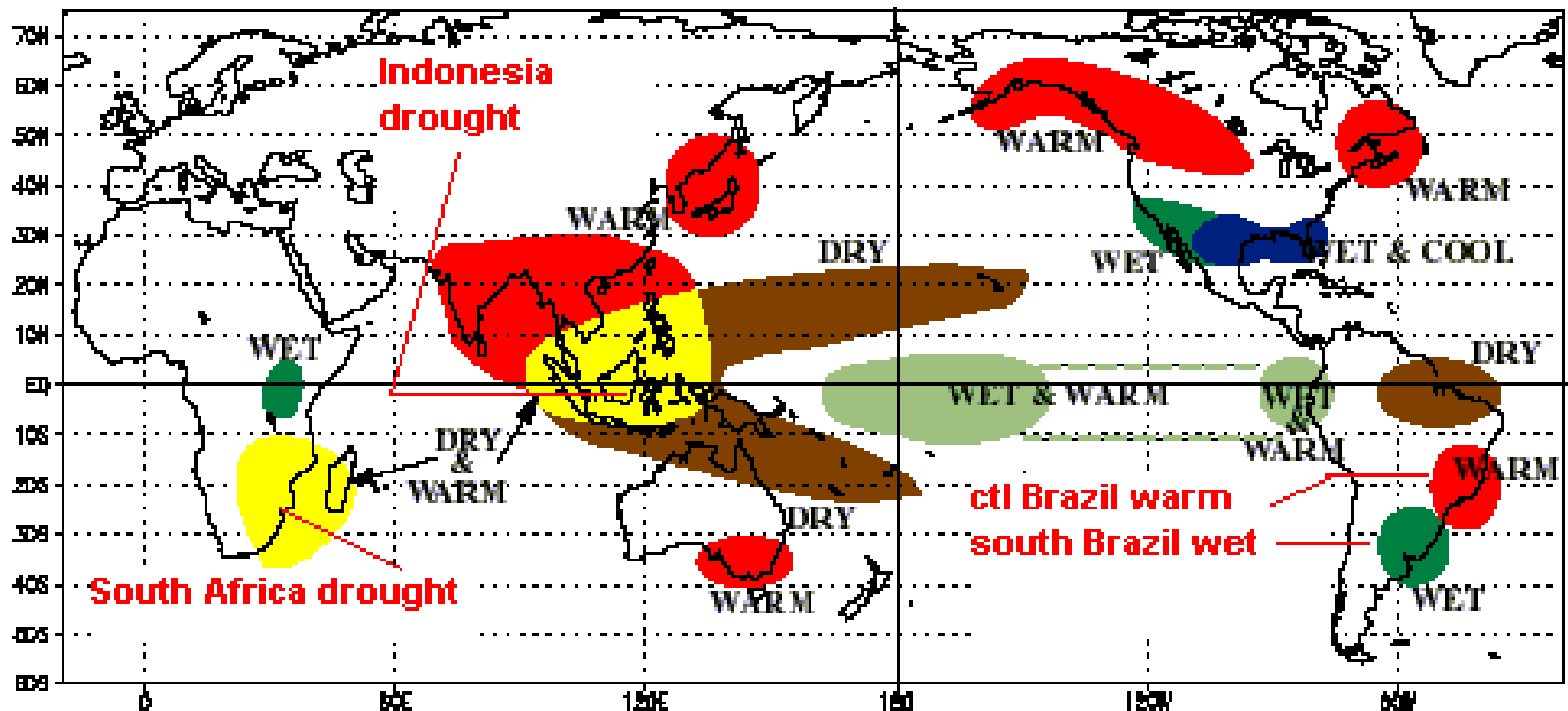
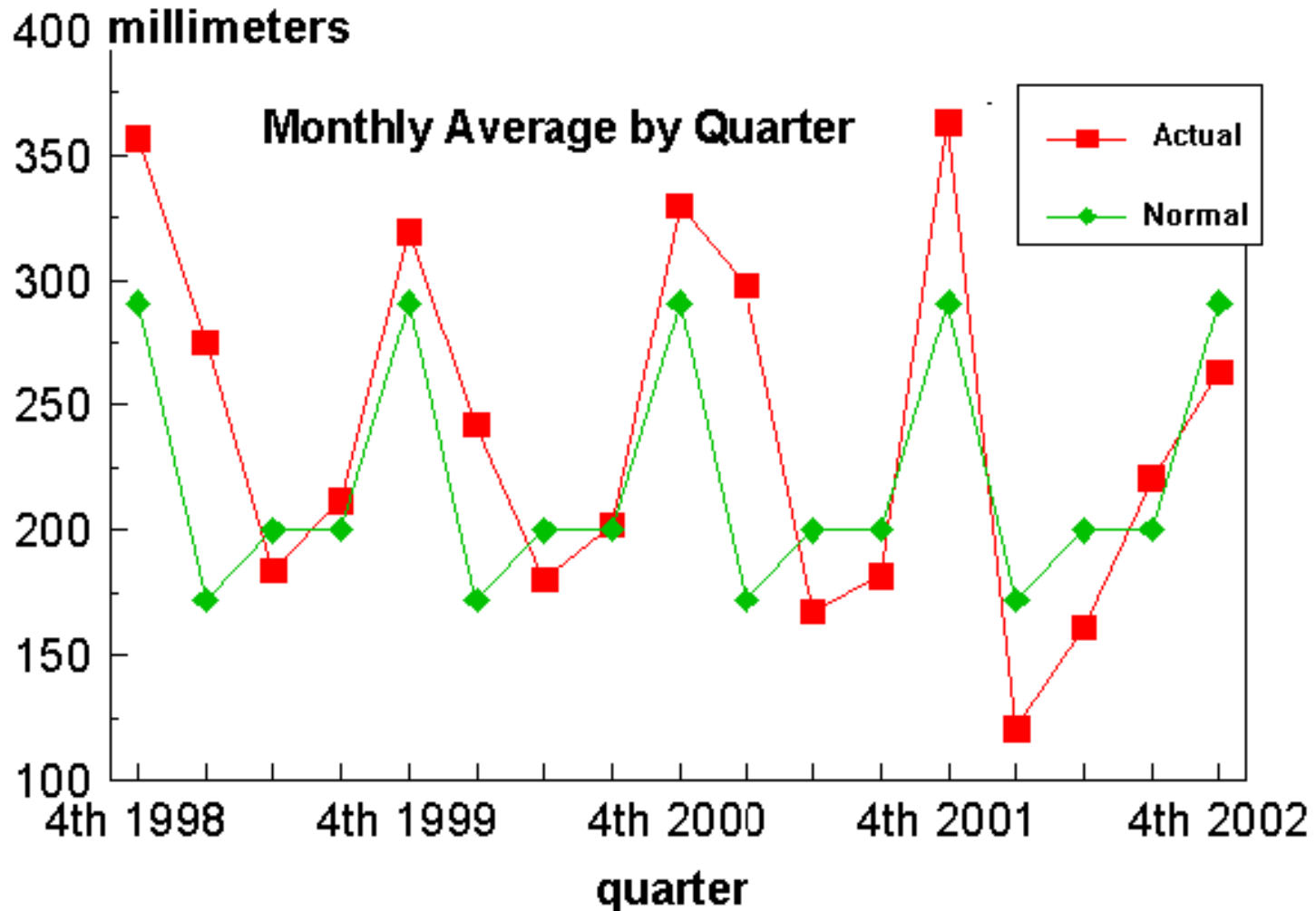


WARM EPISODE RELATIONSHIPS DECEMBER - FEBRUARY



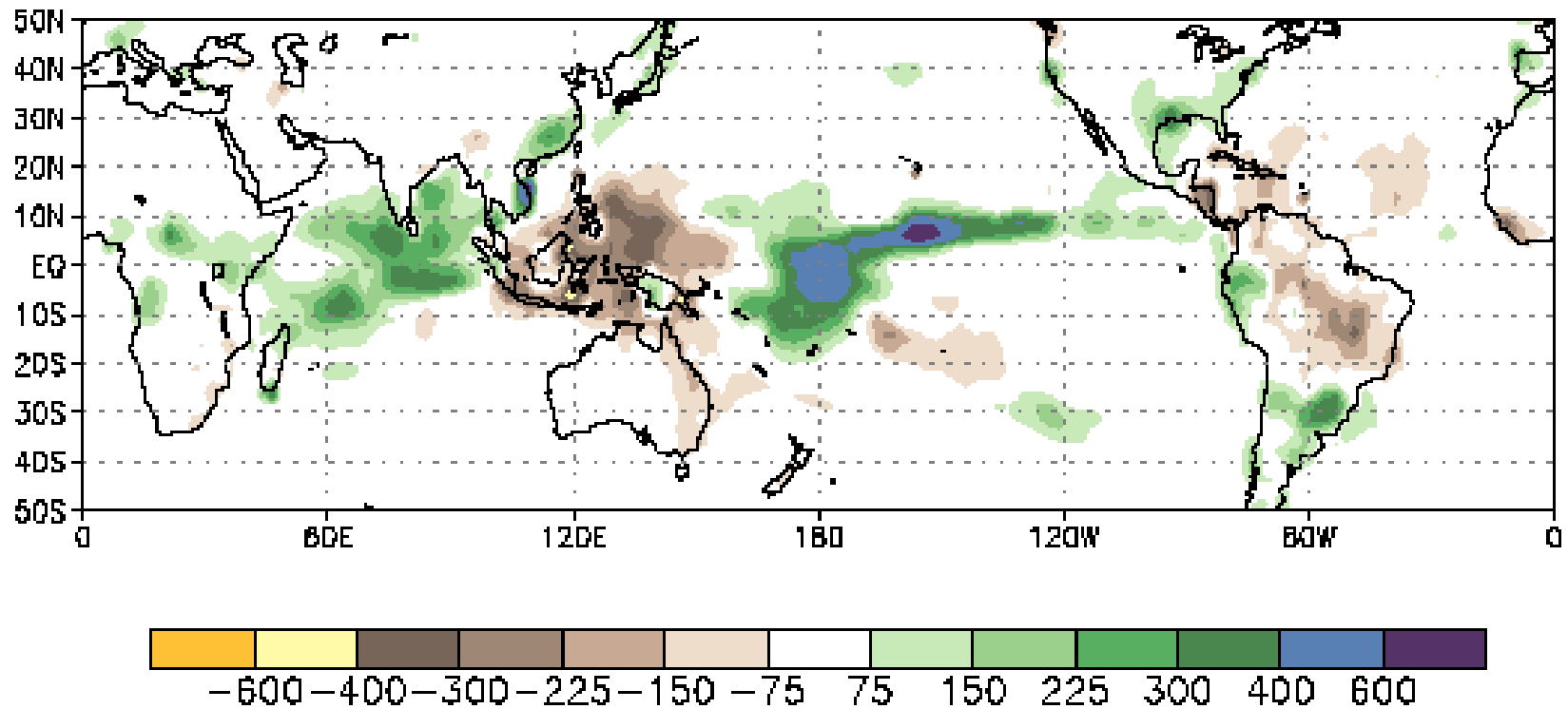
Weather extremes develop in certain parts of the world when El Niño occurs. Abnormal weather is felt most strongly in December-February.

Malaysian Palm Oil Rainfall



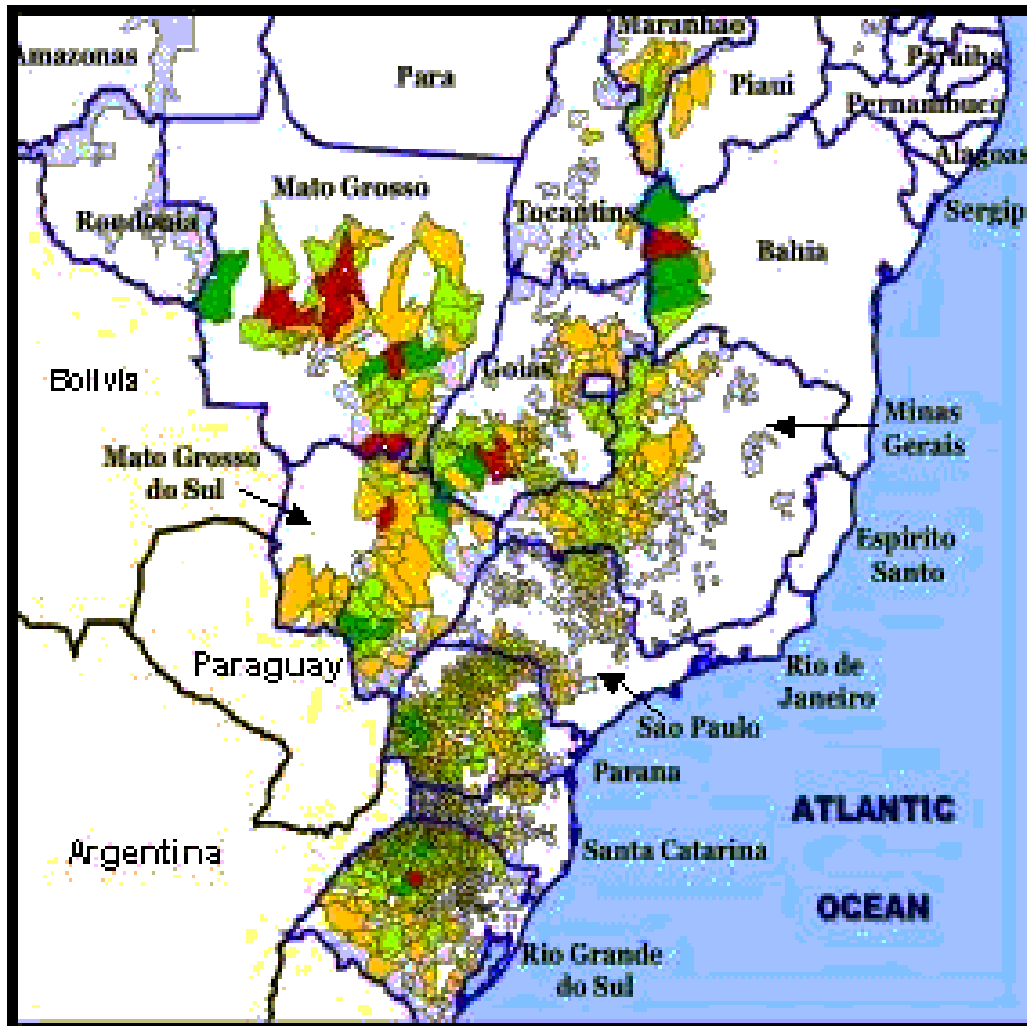
Rainfall was below-normal for the first, second, and fourth quarters of 2002. Drought was harmful for palm fruit development.

Anomalous Precipitation (mm) October–December 2002



Real world conditions matched El Nino predictions.

BRAZIL: Soybean Area Distribution



Source: IBGE 2001

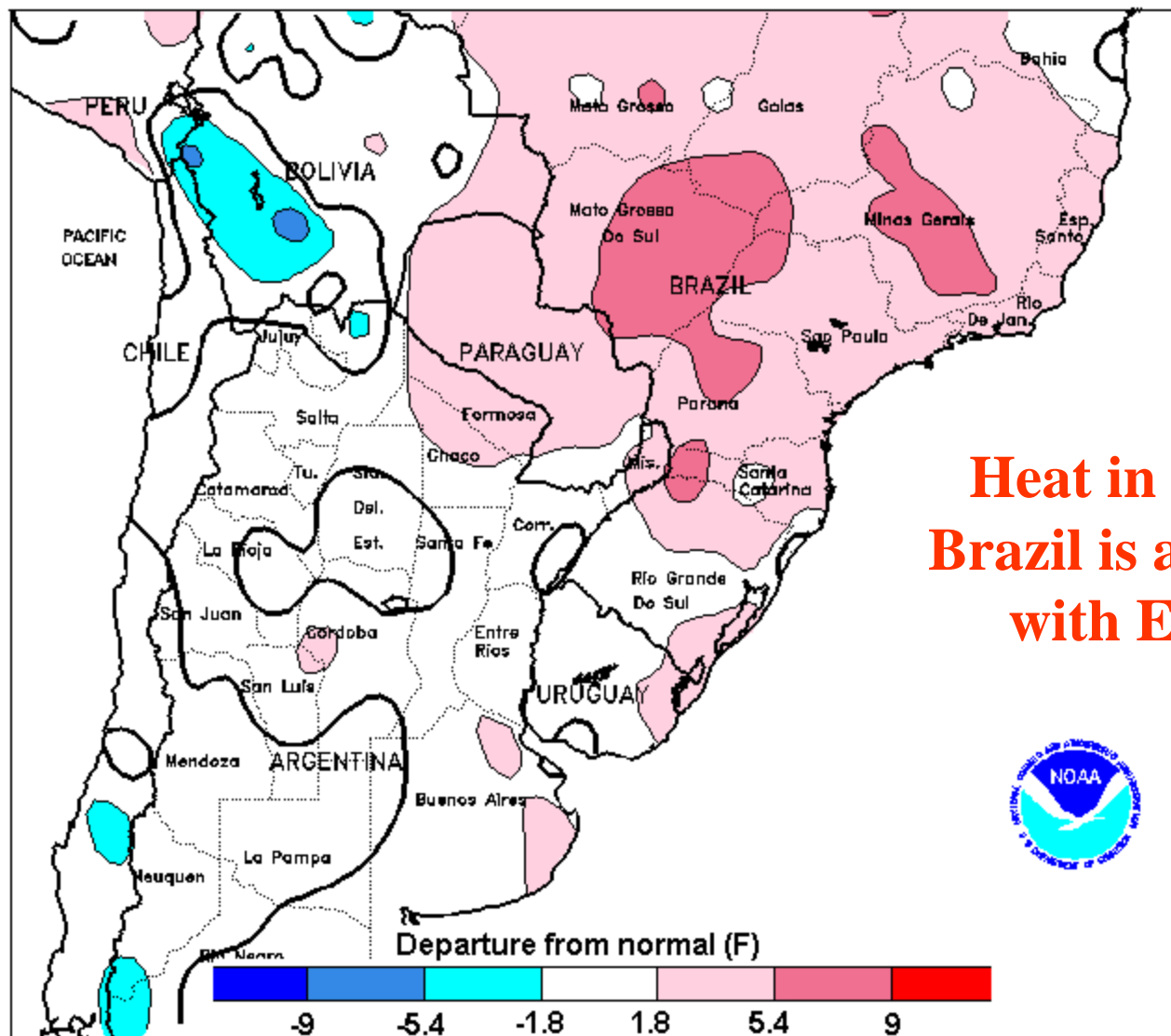


Production is shifting into tropical states.

- Mato Grosso
- Goiás
- Mato Grosso do Sul

El Nino-related drought would have a bigger impact on Brazilian soy output

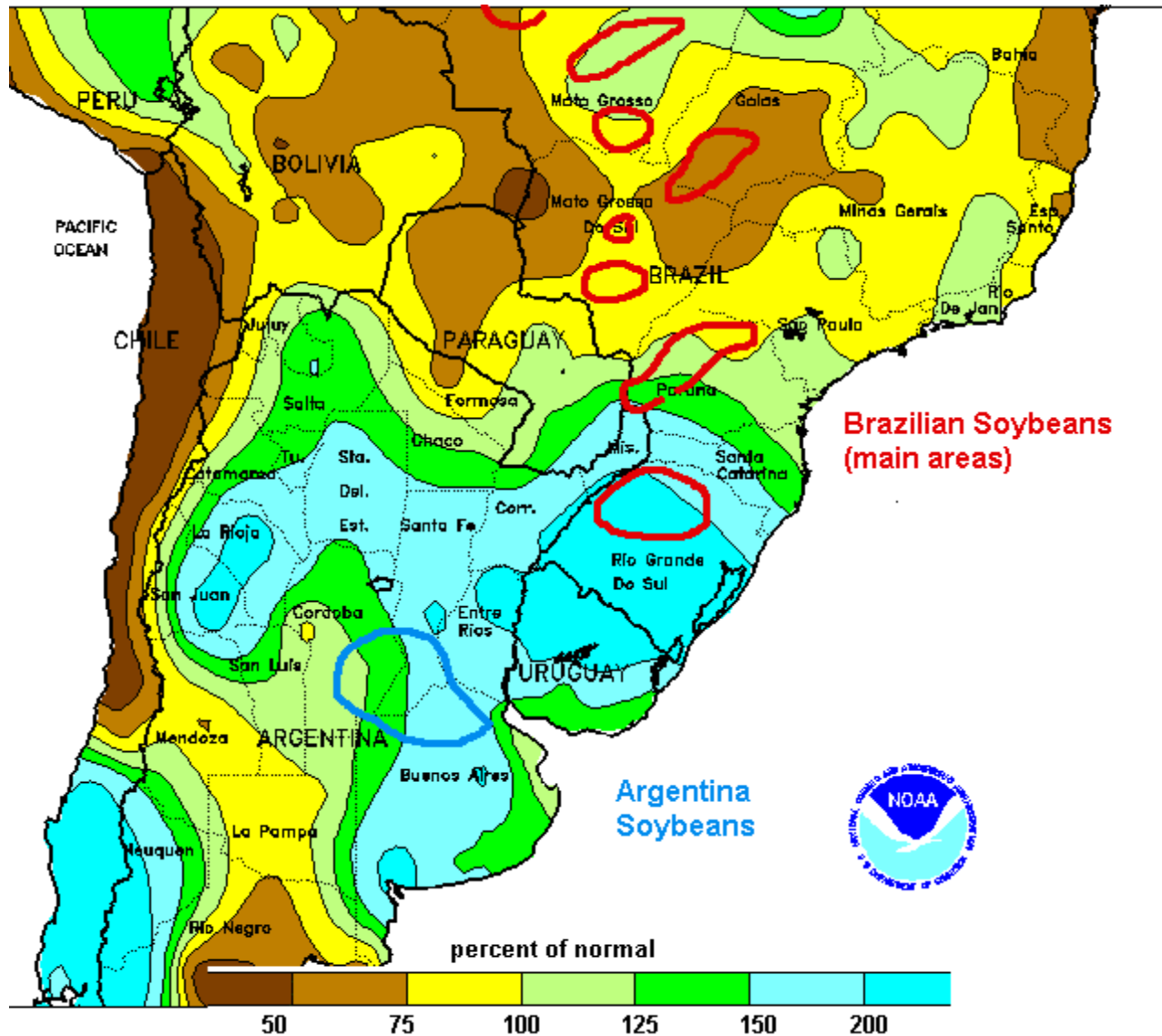
South America Temperatures, October-December 2002



**Heat in Central
Brazil is associated
with El Nino**

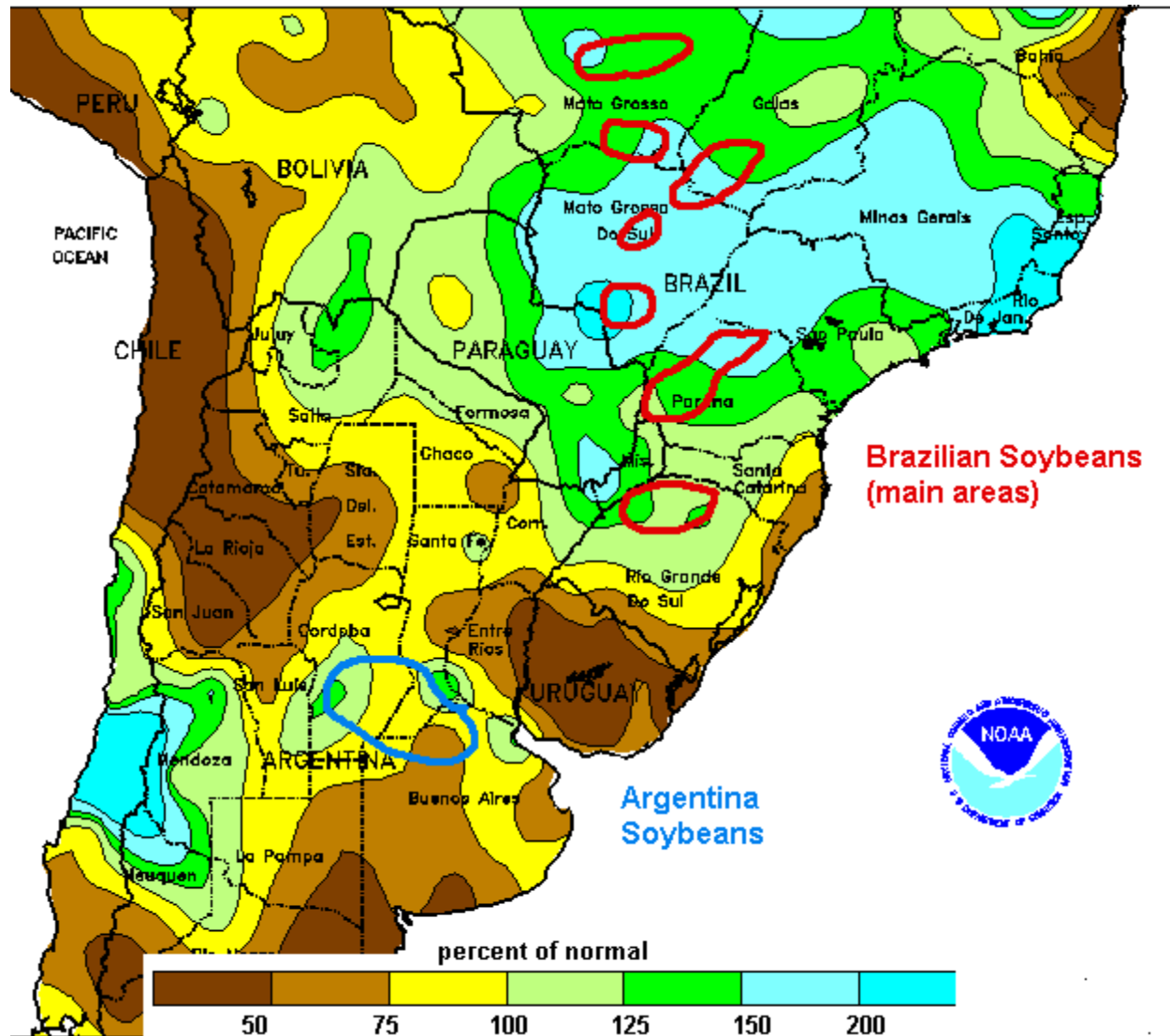


October-December Rainfall % of normal



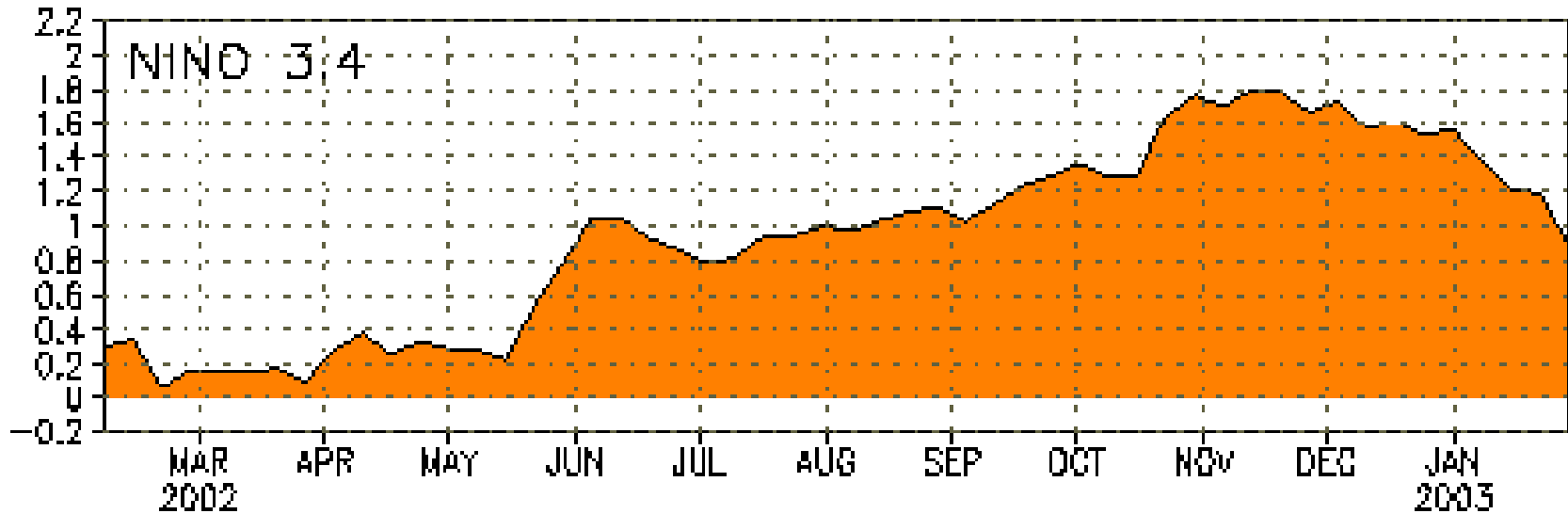
Classical El Nino Weather: Dryness Central Brazil, wetness South

January Rainfall % of Normal

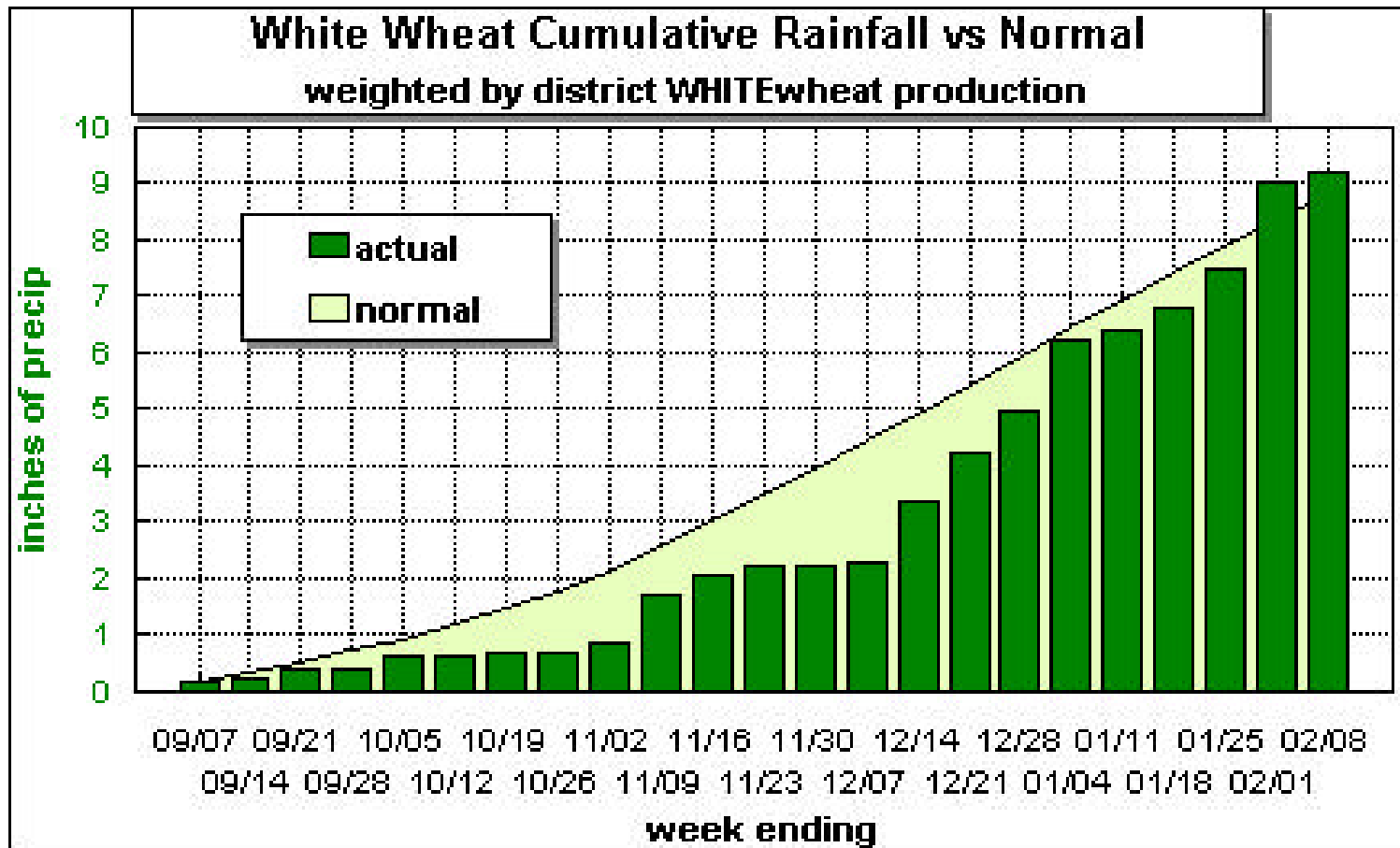


El Nino faded, weather extremes reversed

Sea surface temperatures Central Equatorial Pacific

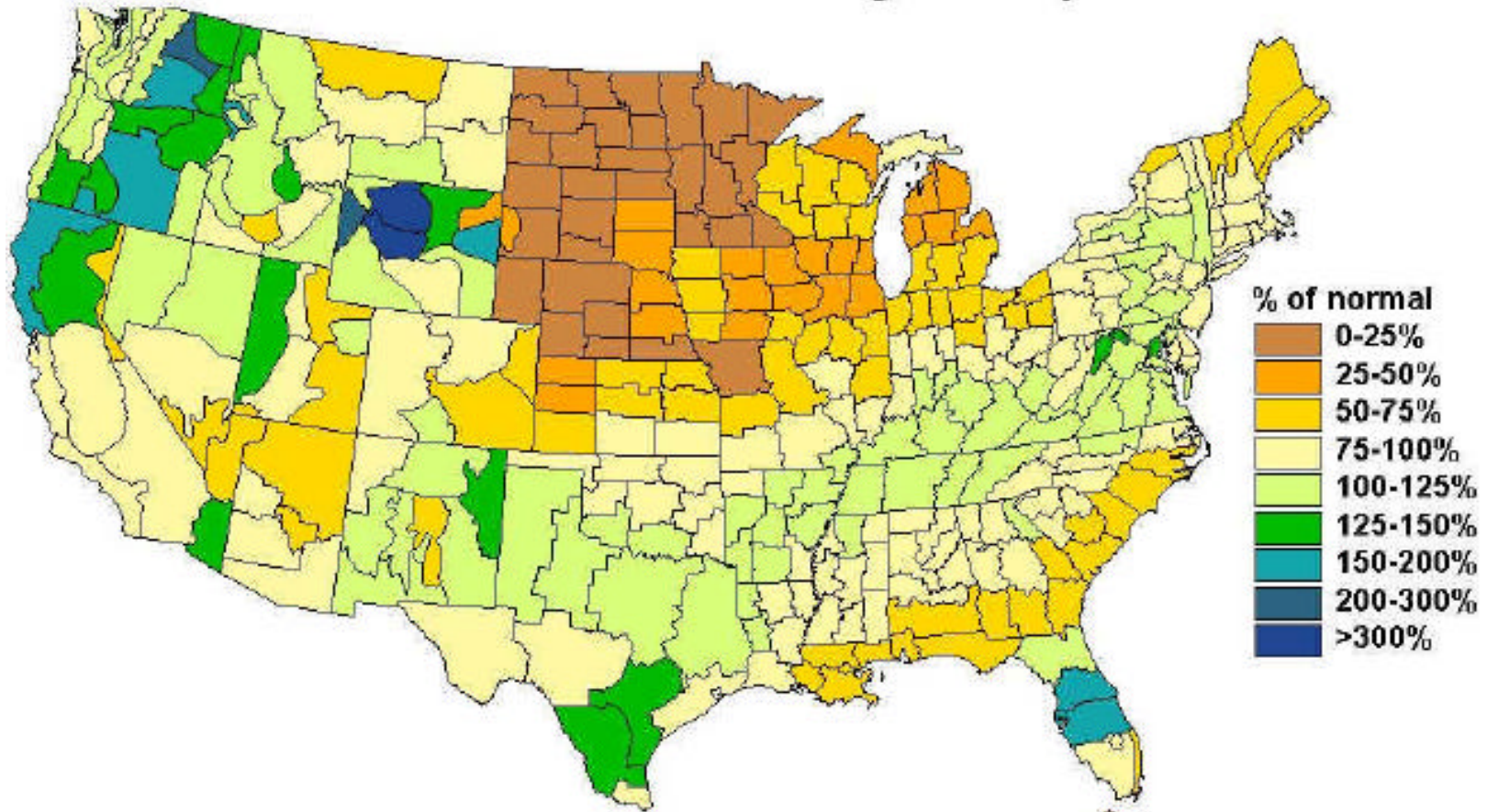


El Nino peaked in November and began declining rapidly in December and January. As El Nino weakened, the classical El Nino weather relationships disappeared.



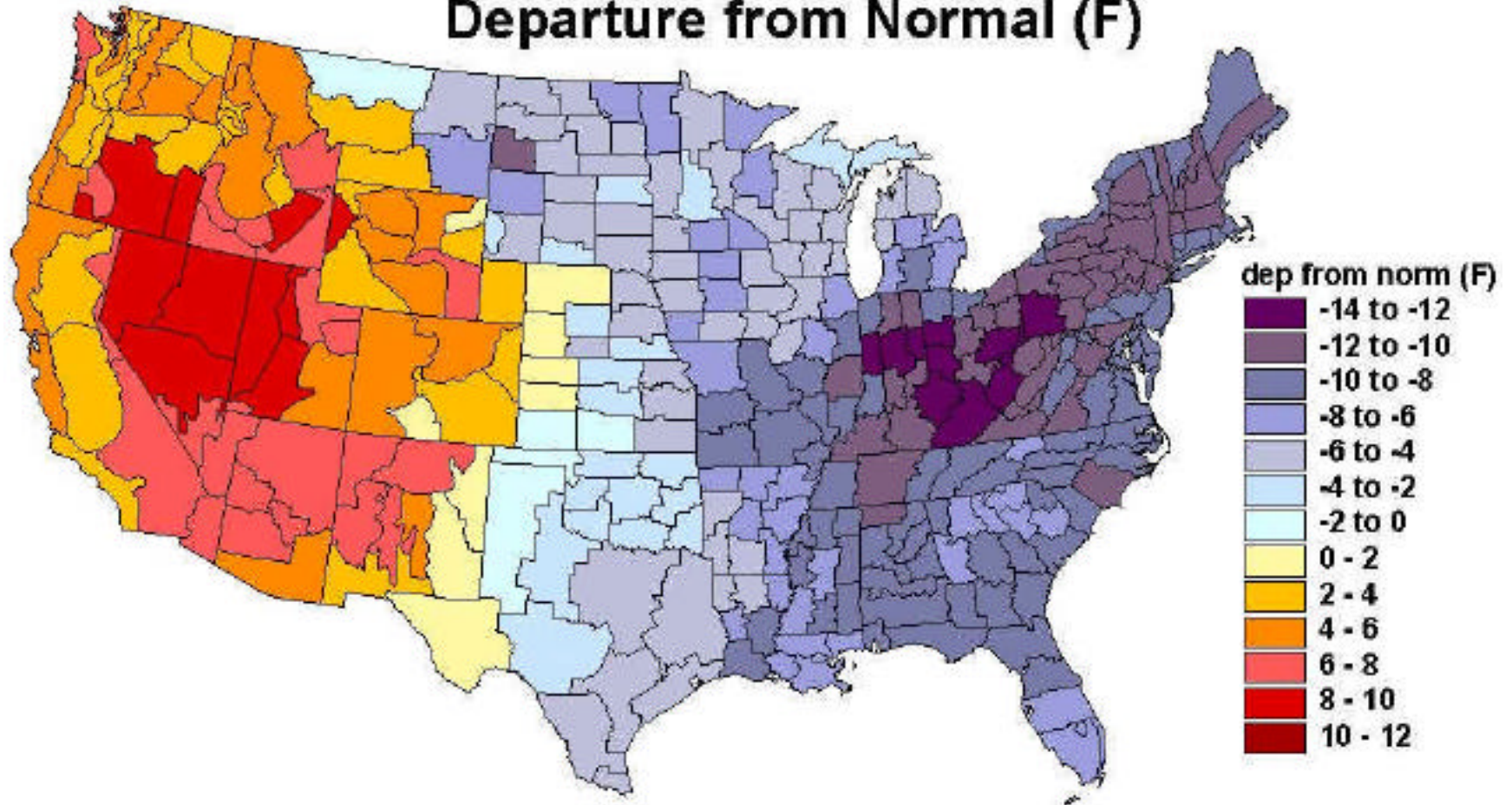
Fall wheat planting was hindered by drought in the Pacific Northwest but precipitation increased after El Nino weakened in December.

December- January Precipitation

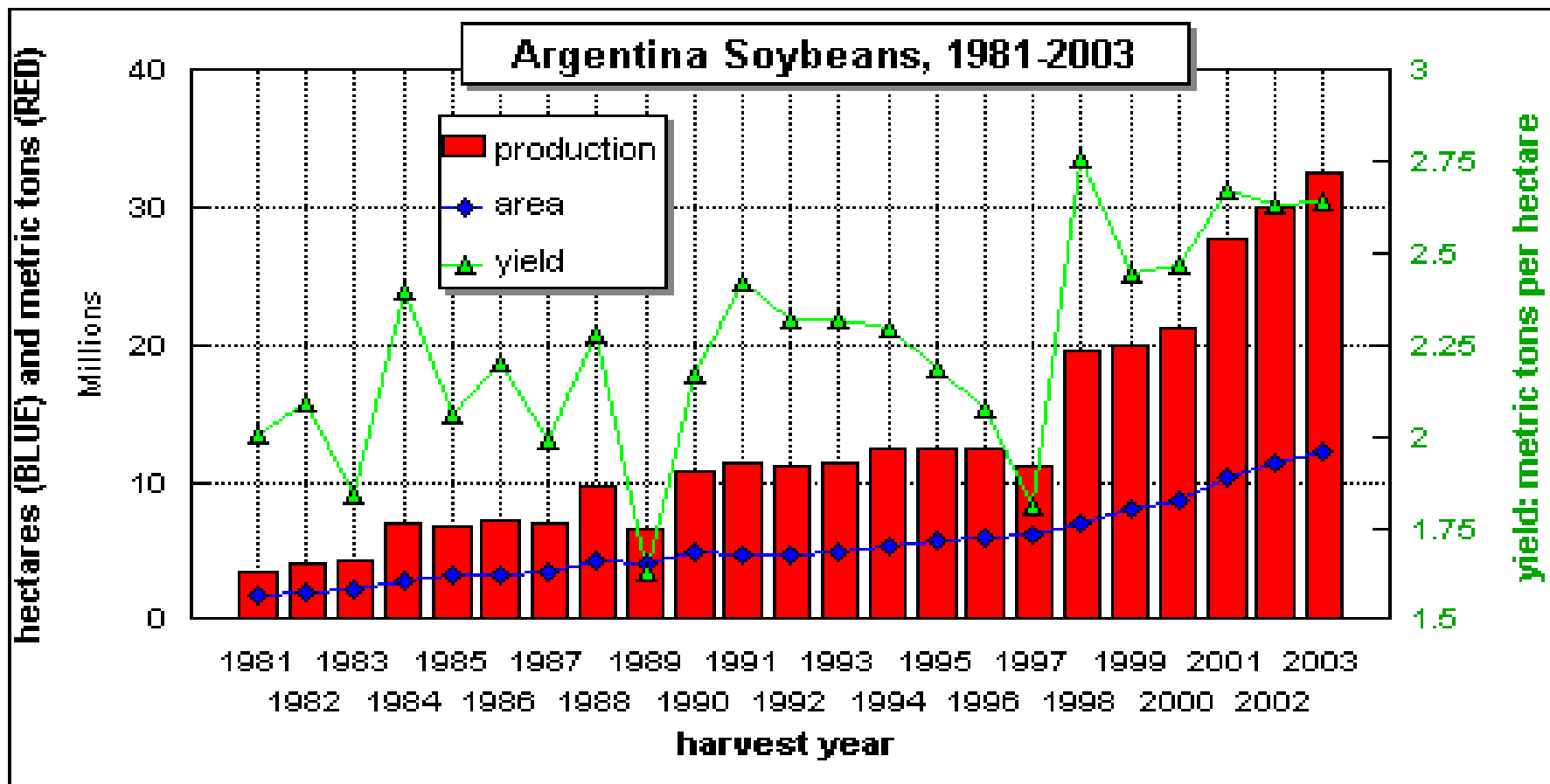


Precipitation lightened up in December and January in the southern states when the subtropical jet weakened.

Temperature 2 weeks ending January 25 Departure from Normal (F)

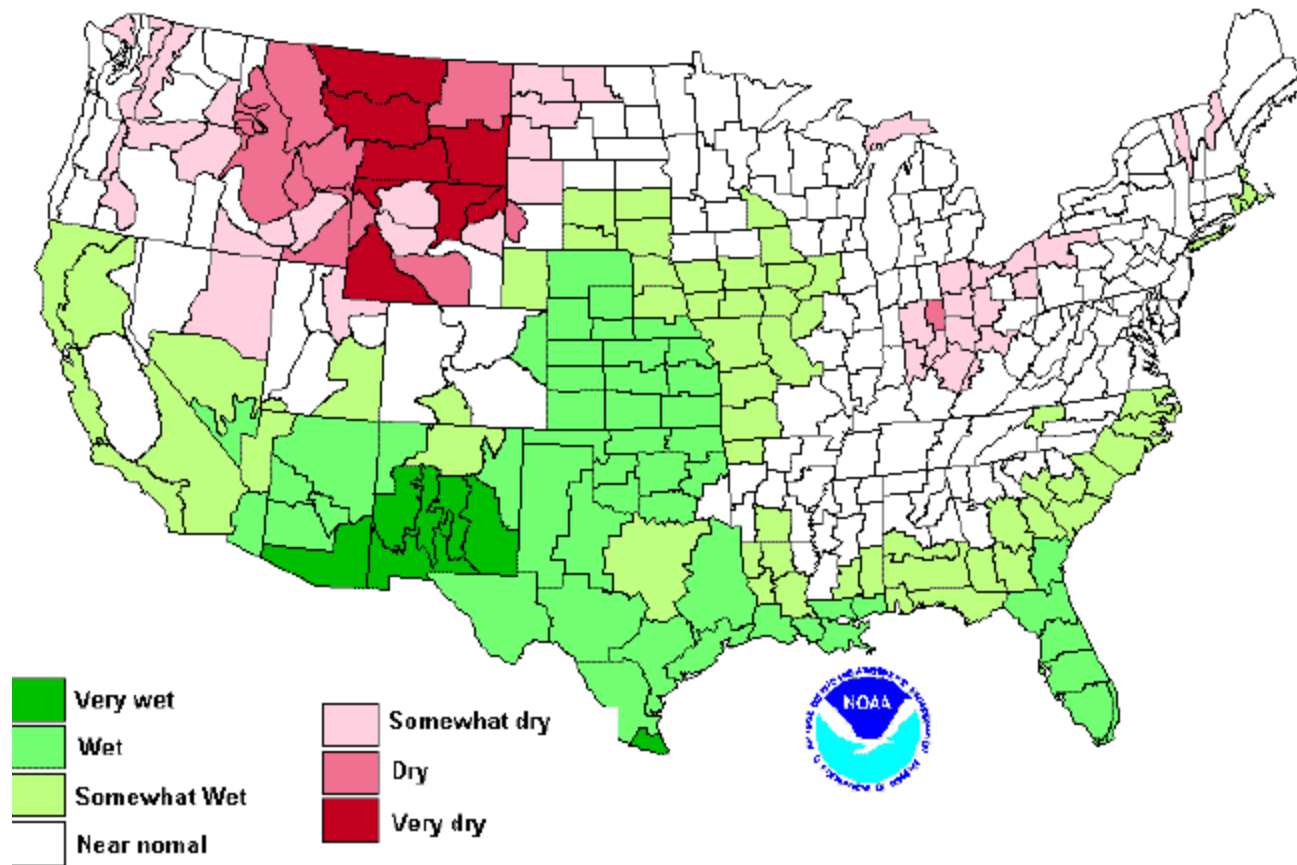


January turned sharply colder in the Midwest, when El Nino weakened.

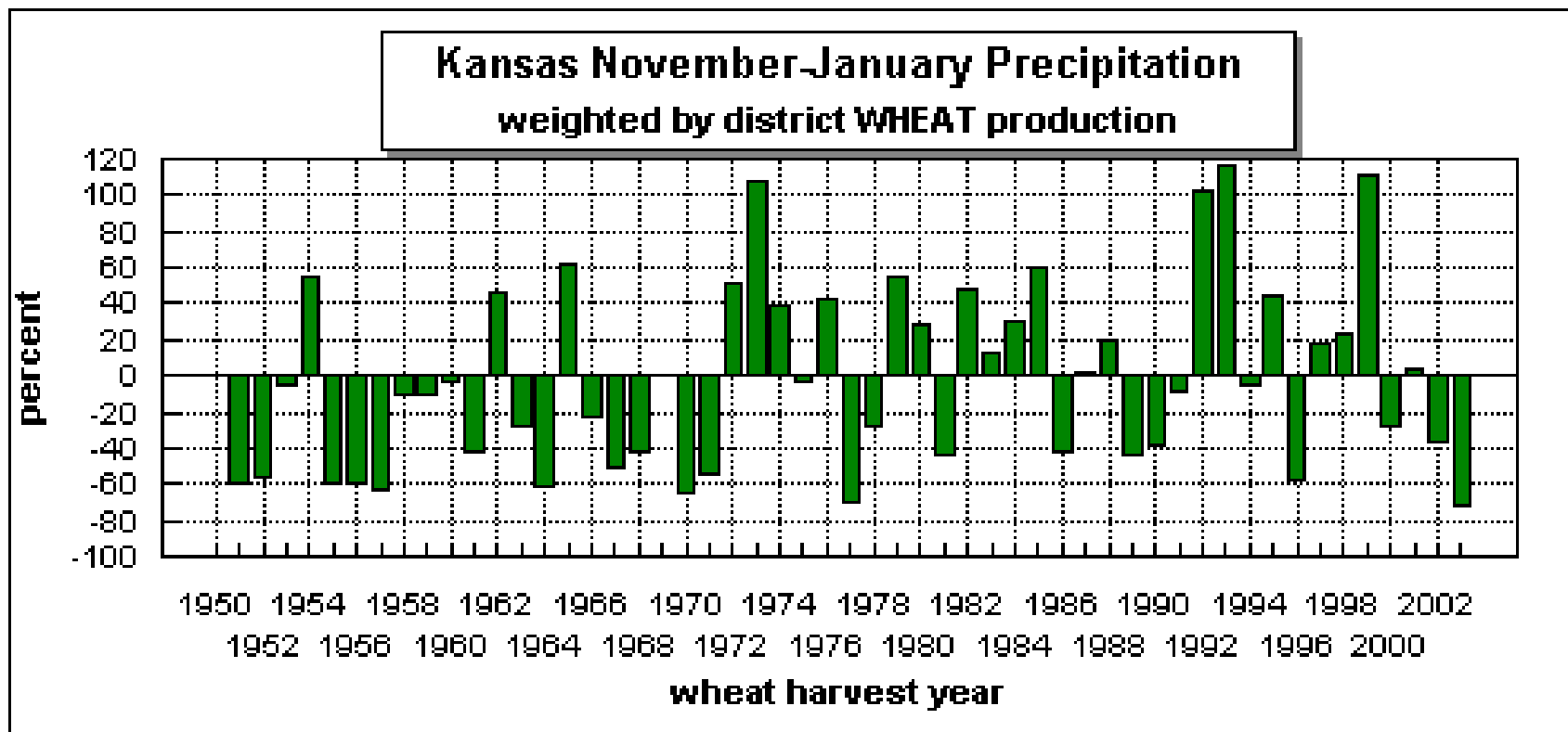


El Nino produced both poor and excellent crops in Argentina -- compare 1983 to 1998. El Nino weakened in 1983, resulting in a brief but damaging drought and poor yields.

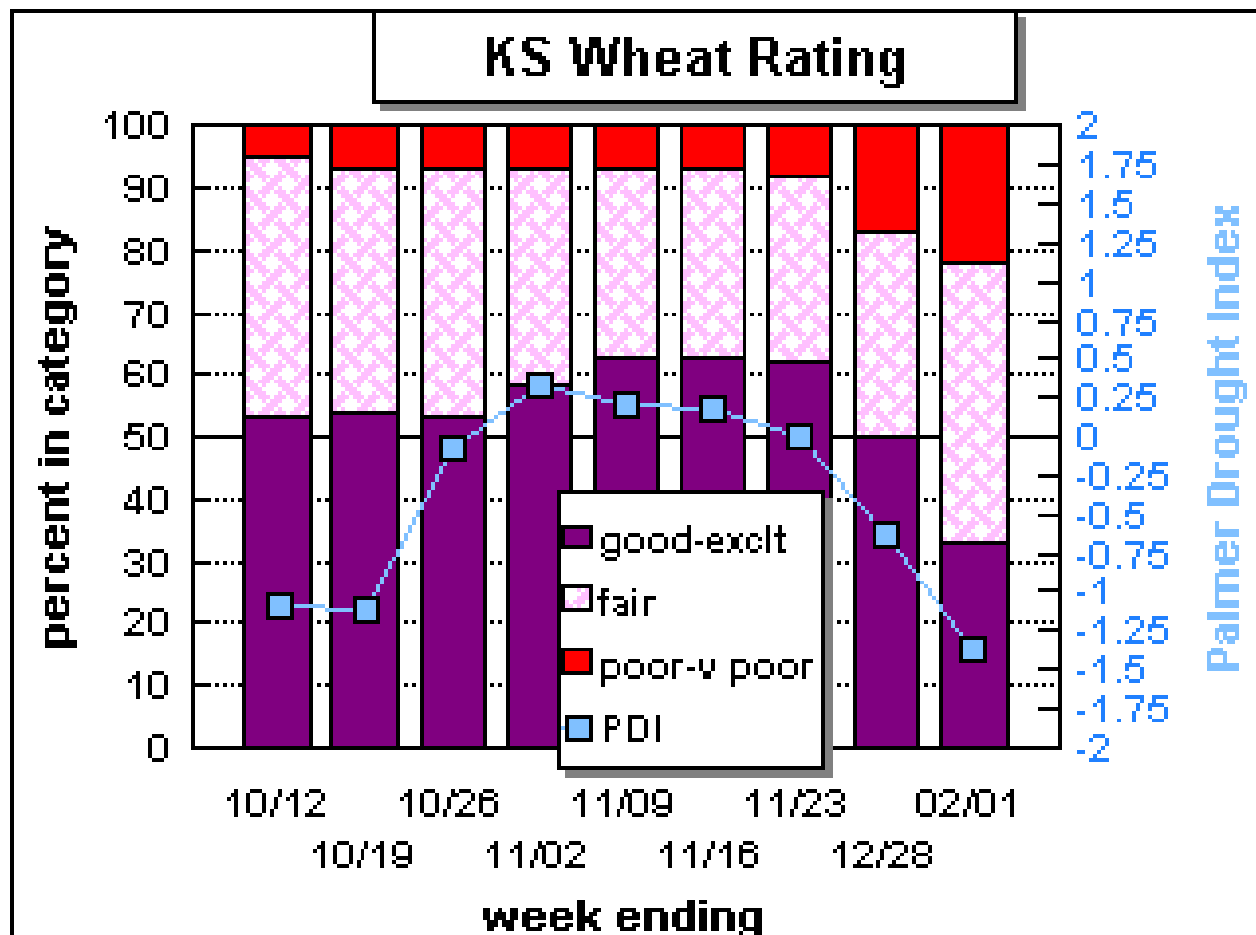
Average December-February Precipitation Rank During ENSO Events 1919, 1941, 1958, 1966, 1973, 1983, 1987, 1988, 1992, 1995, 1998



**Most El Nino winters are wet in the Great Plains,
benefiting winter wheat**

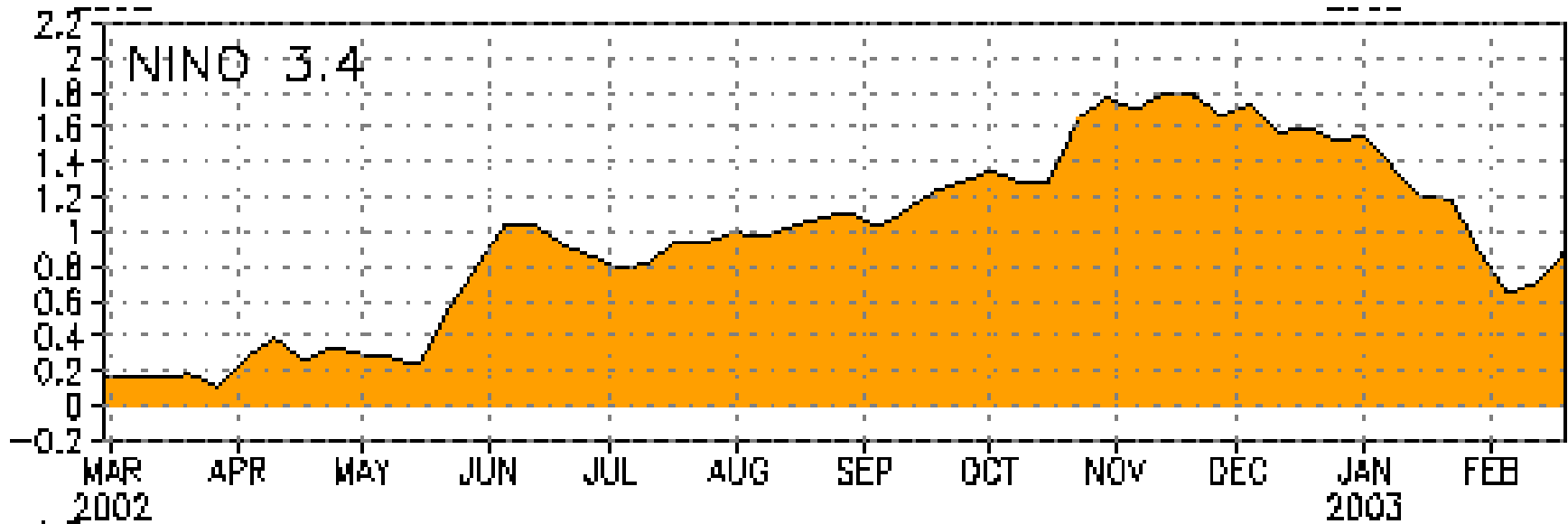


**November-January precipitation was nearly 80% below
normal in Kansas, the top US wheat state**



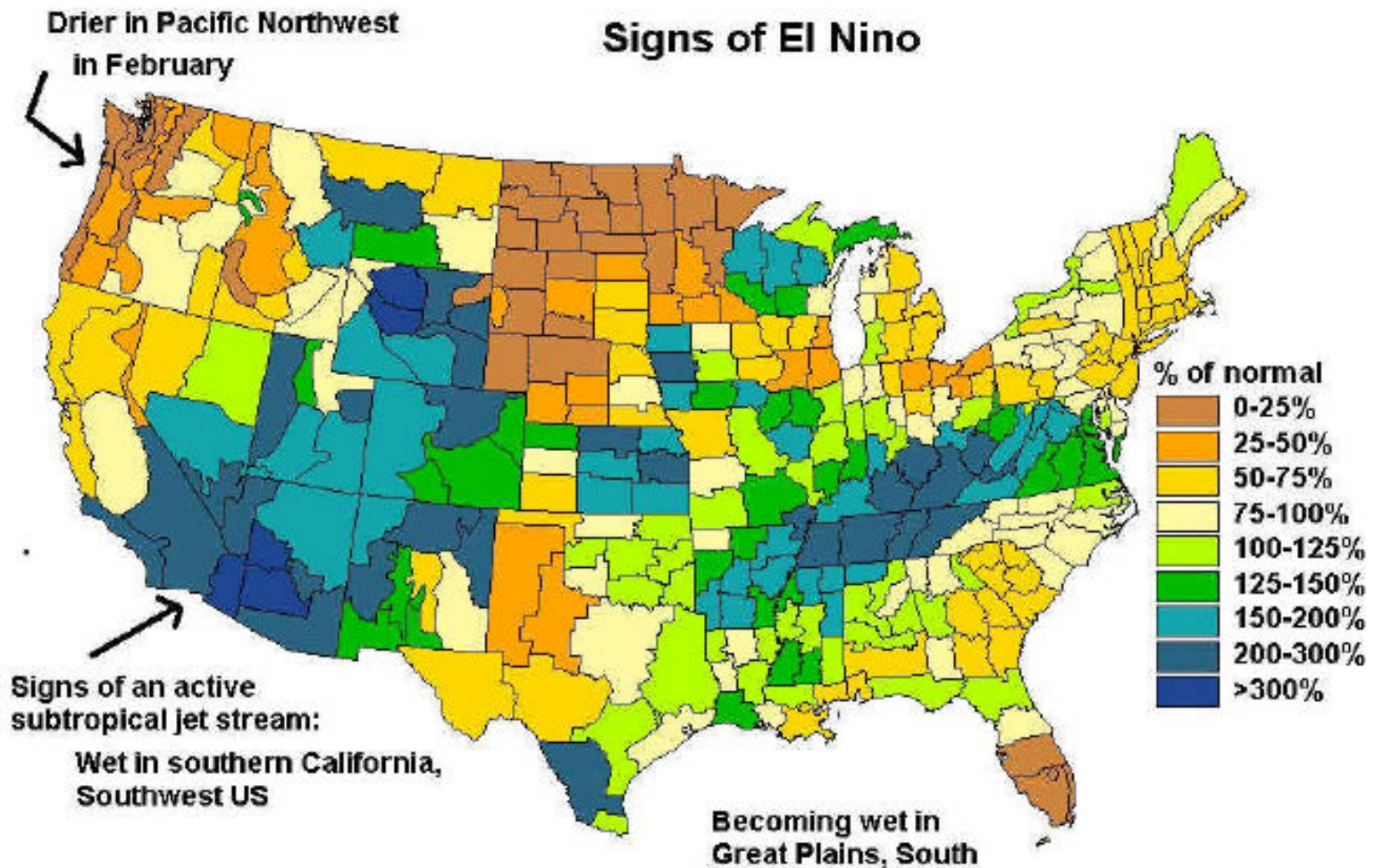
Only one-third of Kansas wheat was good-excellent in early February and 22% was poor-very poor. Winter drought has taken a toll on the crop.

Sea Surface Temperatures Central Equatorial Pacific Ocean

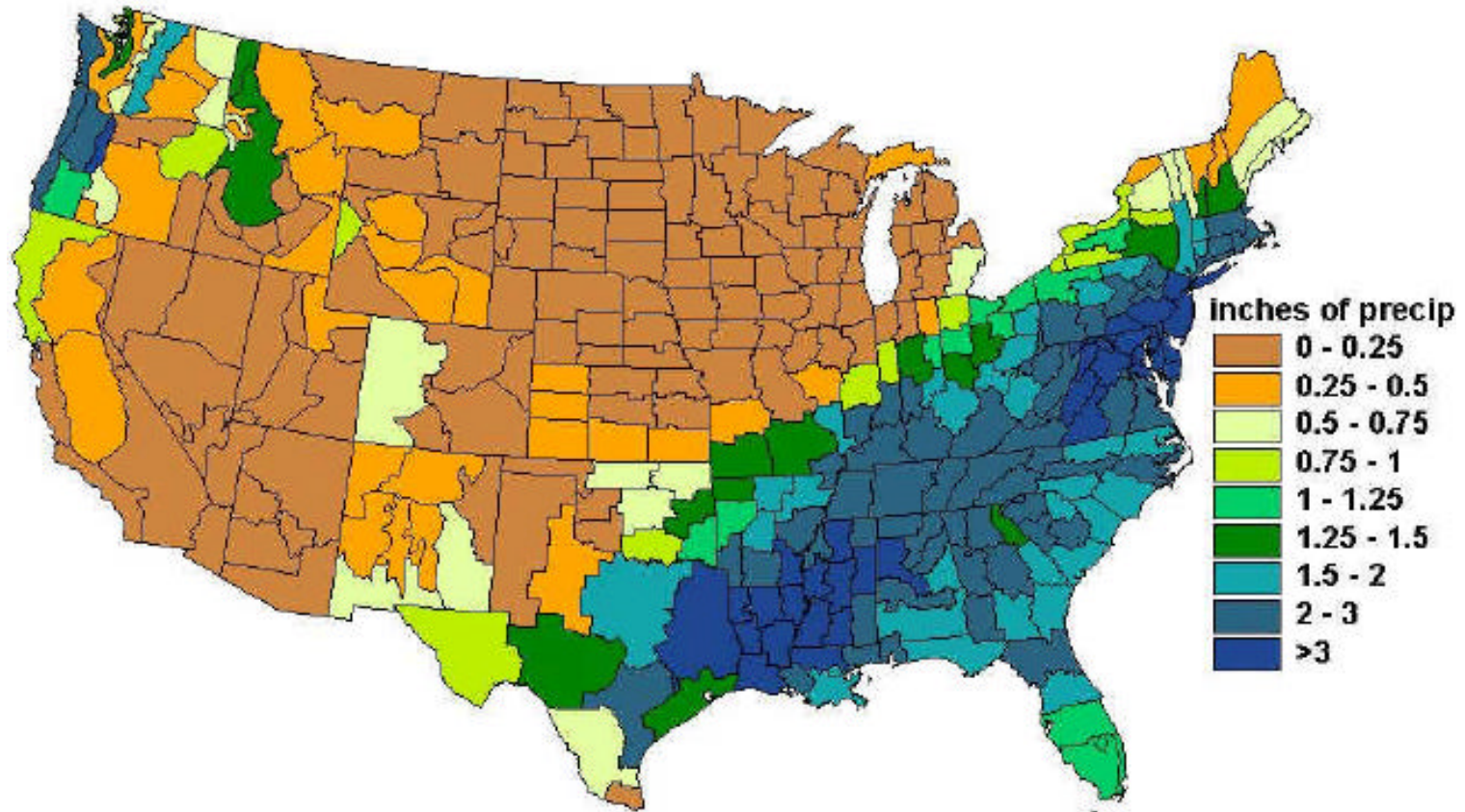


Sea surface temperatures began rising again in February indicating a resurgence in El Nino's strength.

Precipitation 2 weeks ending February 15

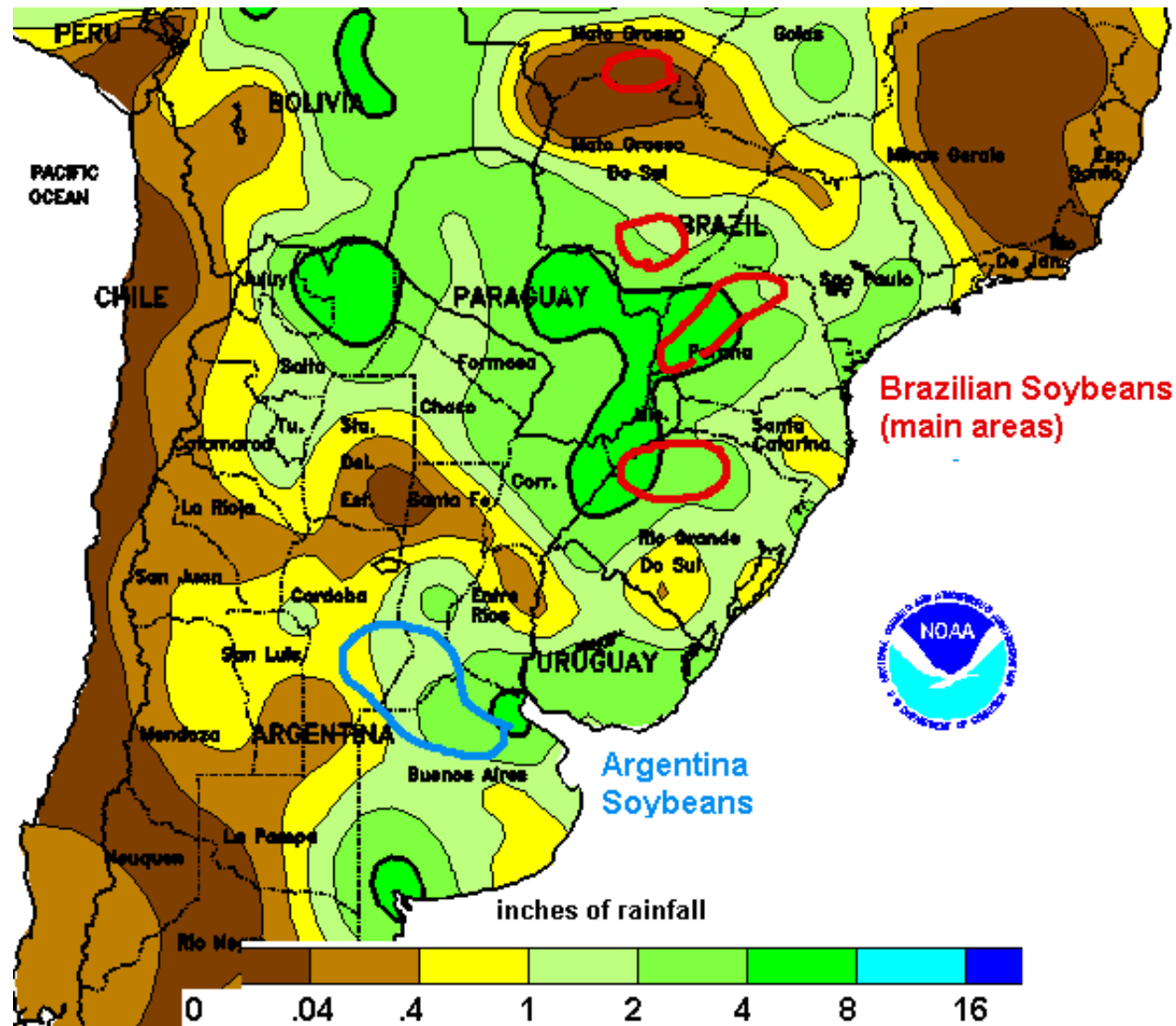


Precipitation week ending February 22 (inches)



The subtropical jet stream strengthened in mid February, increasing storminess in the South and East.

Rainfall week ending February 15



El Nino traits: Dry in Central Brazil, wet in Argentina, south Brazil